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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ARCIERO, ADAM A	
ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
04/12/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,756	GASSE ET AL.	
	Examiner	Art Unit	
	ADAM A. ARCIERO	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 January 1020*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *26-50* is/are pending in the application.

4a) Of the above claim(s) *42-50* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *26,27 and 29-41* is/are rejected.

7)☒ Claim(s) *28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/25/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

LAYER AND METHOD FOR MICROBATTERY PROTECTION BY A CERAMIC-METAL DOUBLE LAYER

Examiner Adam Arciero S.N. 10/574,756 Art Unit 1795 April 9, 2010

DETAILED ACTION

1. Applicant's response filed January 06, 2010 has been received. Claims 26-50 are currently pending. Claims 42-50 are withdrawn from further consideration as being drawn to non-elected inventions.

Election/Restrictions

2. Applicant's election with traverse of the restriction in the reply filed on January 06, 2010 is acknowledged. The traversal is on the ground(s) that unity of invention is present for claims 26-50 and thus the restriction requirement should be withdrawn. This is not found persuasive because Group I and Group II contain the same technical feature of a protection layer formed of a metal or metal alloy coating. Jenson et al. (US 2002/0001747 A1) teaches this technical feature of a microbattery having a protective metal (Fig. 1c). There is a lack of unity *a posteriori*, since such technical features are not Applicant's contribution over the prior art.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 26, 29-31 and 41 are rejected under 35 U.S.C. 102(e) as anticipated by Meitav et al. (US 6,790,556 B1).

As to Claim 26, Meitav et al. discloses an energy storage device such as a battery or a capacitor (anode, cathode, dielectric) (col. 1, lines 10-20). Said elements are coated in part at least by a protective layer formed of stainless steel (col. 7, lines 12-25). Meitav et al. does not specifically disclose wherein the metal or metal alloy has a sufficient thermomechanical resistance to absorb thermomechanical deformations without causing fissures to appear and further having an expansion coefficient less than that claimed in claim 26. However, it is the position of the Examiner that the properties of the metal alloy (stainless steel) protective layer, such as having a sufficient thermomechanical resistance as described above and an expansion coefficient less than $6.10^{-6}°C^{-1}$, are inherent, given that the materials of Meitav et al. and the present application are similar. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. Inherency is not established by probabilities of possibilities. *In re Robertson*, 49 USPQ2d 1949 (1999).

As to Claims 29 and 31, Meitav et al. further discloses at least one other protective layer formed of a metal such as gold (col. 7, lines 11-25). It is the position of the Examiner that the properties of the second protective layer, such as having a sufficient thermomechanical resistance as described in the claim, are inherent, given that the materials of Meitav et al. and the

present application are very similar. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. Inherency is not established by probabilities of possibilities. *In re Robertson*, 49 USPQ2d 1949 (1999).

As to Claim 30, Meitav et al. does not specifically disclose wherein the second protective layer is formed of a metal having a Vickers hardness less than 50. However, it is the position of the Examiner that the properties of the second protective layer, such as having a Vickers hardness less than 50, are inherent, given that the materials of Meitav et al. and the present application are very similar. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. Inherency is not established by probabilities of possibilities. *In re Robertson*, 49 USPQ2d 1949 (1999).

As to Claim 41, Meitav et al. discloses wherein the elements are encapsulated in the protecting layers (Fig. 6).

5. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meitav et al. (US 6,790,556 B1) as applied to claims 26, 29-31 and 41 above, and further in view of Sekido et al. (US 4,148,976).

As to Claim 27, Meitav et al. does not specifically disclose wherein the metal alloy (stainless steel) comprises at least one of W, Ta, Mo and Zr.

However, Sekido et al. teaches of a stainless steel protective layer for a battery wherein the stainless steel comprises Mo (col. 4, lines 26-50). At the time of the invention, it would have

been obvious to one of ordinary skill in the art to modify the protective stainless steel layer of Meitav et al. with that of Sekido et al., because Sekido et al. recognizes that such a layer is highly resistant to corrosion (col. 2, lines 59-64).

6. Claims 32-33 and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meitav et al. (US 6,790,556 B1) as applied to claims 26, 29-31 and 41 above, and further in view of Neudecker et al. (US 6,168,884).

As to Claim 32, Meitav et al. does not specifically disclose an electrically insulating layer.

However, Neudecker et al. teaches of a battery comprising an overlying layer (overlying the battery elements) (col. 5, lines 6-31). At the time of the invention, it would have been obvious to modify the battery of Meitav et al. with an overlying layer (insulating layer), because Neudecker et al. teaches that such a layer accommodates large volume changed during battery charge and discharge (col. 4, lines 40-46).

As to Claim 33, Neudecker et al. teaches wherein the overlying insulating layer is placed between the elements of the battery and the metallic protection layers of Meitav et al. (Fig. 1b).

As to Claims 34-35, Neudecker et al. teaches wherein the overlying insulating layer is composed of an oxide comprising Al, Be or Si (col. 5, lines 25-30).

As to Claims 37-38, Neudecker et al. teaches wherein the overlying insulating layer is comprised of a nitride such as BN or Si_3N_4 (col. 5, lines 25-30).

7. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meitav et al. (US 6,790,556 B1) view of Neudecker et al. (US 6,168,884) as applied to claims 32-33 and 37-38 above, and further in view of Katz et al. (US 6,200,704 B1).

As to Claim 36, the combination of Meitav et al. and Neudecker et al. does not specifically disclose wherein the insulating layer is made of a sulphide.

However, Katz et al. teaches of a battery comprising a protective layer to protect the negative electrode, composed of metal sulfides or nitrides (col. 9, lines 10-21). Katz et al. is clearly teaching materials such as metal sulphides and nitrides used as protecting insulating layers for anodes in batteries as being functionally equivalent. Therefore, it would have been obvious to one of ordinary skill in the art to substitute a metal sulphide layer for the nitride layer in Meitav et al. and Neudecker et al.

8. Claims 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meitav et al. (US 6,790,556 B1) view of Neudecker et al. (US 6,168,884) as applied to claims 32-33 and 37-38 above, and further in view of Verma et al. (US 2002/0071989 A1).

As to Claims 39-40, the combination of Meitav et al. and Neudecker et al. does not specifically disclose wherein the insulating layer is a carbide selected from those in claim 40.

However, Verma et al. teaches of an insulating layer comprising silicon nitride or silicon carbide (pg. 2, [0026]). Verma et al. is clearly teaching materials such as silicon nitride and silicon carbide used as protecting insulating layers in batteries as being functionally equivalent. Therefore, it would have been obvious to one of ordinary skill in the art to substitute silicon carbide for the silicon nitride layer in Meitav et al. and Neudecker et al.

Allowable Subject Matter

9. Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The closest prior arts of record, Meitav et al., Neudecker et al., Verma et al. and Katz et al. do no teach or suggest wherein the protective layer is formed of a nitrated alloy chosen from the group WN_x, TaN_x, MoN_x, ZrN_x, TiN_x and AlN_x wherein $x < 1$.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADAM A. ARCIERO whose telephone number is (571)270-5116. The examiner can normally be reached on Monday to Friday 8am to 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AA

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795